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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/583,041

03/16/2007

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EXAMINER

PAYER, HWEI SIU CHOU

ART UNIT

PAPER NUMBER

3724

NOTIFICATION DATE

DELIVERY MODE

02/09/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/583,041	<b>Applicant(s)</b> ASAKAWA, JUN	
	<b>Examiner</b> HWEI-SIU C. PAYER	<b>Art Unit</b> 3724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/15/06, 9/20/06 and 8/20/08</u> .                            | 6) <input type="checkbox"/> Other: _____                          |

## Detailed Action

Applicant's election with traverse of species D in the reply filed on 10/22/2009 is acknowledged. In light of applicant's arguments, the restriction is hereby withdrawn.

### Claims Rejection - 35 U.S.C. 112, second paragraph

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2, 5 and 9-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(1) The scope of claims 2 and 9 is vague because it is not clear exactly what method step of production is being claimed therein and how the hardness of the forging die material further limits the method step of the forging die production.

(2) In claim 5, it is unclear what "a workpiece" refer to. Shouldn't the claimed corner recess be formed in the forging die material of claim 1? Moreover, it is not understood how the compound curvature of the corner recess further limits the claimed production method. Exactly what method step is being claimed that produces such compound curvature in the corner recess?

**Claims Rejection - 35 U.S.C. 102(b)**

1. The following is a quotation of the appropriate paragraphs of 35U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 5, 6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Cale (U.S. Patent No. 3,863,525).

Cale discloses a forging die production method comprising a cutting step (Fig.1/4) which employs a cutting tool (2/5) as claimed. The cited structural limitation “a ball end mill having a surface which has undergone a hardening treatment and in which a forging die material is cut under conditions where a length of tool extension L (mm), radius R (mm) of a cutting edge of the ball end mill, spindle speed A (rpm) and feed rate B (mm/min) satisfy  $(B/A)^2 \times (L/(2 \times R)) = 0.01 \text{ to } 0.05$ ” has been carefully considered but is deemed not to define any method step and accordingly cannot serve to distinguish. Moreover, it has been held that to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense, and not to amount to the mere claiming of a use of a particular structure. Ex parte Pfeiffer, 1962 C.D. 408 (1961).

Regarding claim 5, Cale shows a corner recess of a workpiece (1) having a compound curvature (6,7, see Fig.4).

Regarding claim 6, Cale shows a forging die (Fig.7) produced through the forging die production method (Fig.1/4).

Regarding claim 8, Cale shows a forged article (11) produced through forging by use of the forging die (Fig.7)

### **Claims Rejection - 35 U.S.C. 103(a)**

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cale (U.S. Patent No. 3,863,525).

Cale as set forth shows the claimed forging die production method, and the forging die material (1) has hardness but Cale fails to shows the hardness range being of HRC 45 to 62 and the surface roughness for the forging die (Fig.7) being in the range of Rmax of 5 µm or less.

To select a certain hardness range such as HRC 45 to 62 for Cale's forging die material (1) and a certain surface roughness such as Rmax of 5 µm or less for Cale's forging die (Fig.7) would have been obvious to one having ordinary skill in the art, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233 (CCPA 1955).

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3. Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cale (U.S. Patent No. 3,863,525) in view of Nakamura (U.S. Patent No. 5,378,091).

Cale as set forth shows the claimed forging die production method except it lacks the step of applying cutting oil to the cutting tool (2/5).

However, it is notoriously old and well known in the art to apply cutting oil directly to a cutting/milling tool to facilitate removing chips generated during machining/cutting as evidenced by Nakamura (see column 2, lines 31-40).

Thus, it would have been obvious to one skilled in the art at the time this invention was made to provide Cale's production method with an oil applying step for the advantage set forth.

4. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cale (U.S. Patent No. 3,863,525) in view of Kratz et al. (U.S. Patent No. 3,712,157).

Cale as set forth shows the claimed forging die production method and includes at least rough cutting (i.e. the precut metal block 1 before milling cutter 2/5 applied thereon) and a profile cutting (Figs. 1 and 4) except the method lacks a heat treatment step.

However, it is notoriously old and well known in the art to include a heat treatment step in a die production method to harden and temper a die for providing the die with sufficient toughness and wear resistance as evidenced by Kratz et al. (see column 1, lines 48-57).

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Therefore, it would have been obvious to one skilled in the art at the time this invention was made to modify Cale by including a heat treatment step for the advantage set forth.

Regarding the claimed “finishing cutting”, it is inherent or would have been obvious to one skilled in the art to include more than one cutting (in addition to the rough cutting) to finish the outer contour of the die to size if needed.

Cale's profile cutting includes at least three steps (step 1 - pressing down end milling cutter 2 to form a hemispherical recess; step 2 - cutting a semi-cylindrical horizontal groove 3 in the die block 1; and step 3 – moving end-milling cutter 5 back and forth in an arcuate path to form shoulder 6), and a feed direction includes at least one of a direction in relation to contour line processing and a direction in relation to circulation milling. The pick feeds in respective cutting steps depend more upon the final profile shape of the forging die desired than on any inventive step.

### **Point of Contact**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hwei-Siu C. Payer whose telephone number is 571-272-4511. The examiner can normally be reached on Monday through Friday, 7:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on 571-272-4502. The fax phone numbers for the organization where this application or proceeding is

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assigned are 571-273-8300 for official communications and 571-273-4511 for proposed amendments.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

H Payer  
February 2, 2010

/Hwei-Siu C. Payer/  
Primary Examiner, Art Unit 3724